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ABSTRACT

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Relationships Among Cognitive-Motivational Processes and Academic Performance in Community College Students with a History of Academic Failure

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New York, New York

Paper presented at the annual meeting of the American Educational Research Association, New Orleans, April, 1988.

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Abstract

The study targeted students with a history of academic failure to investigate the relationships among reported self-regulated learning strategies, attributional patterns, academic performance expectancies, and academic performance. Ninety-seven community college students, over 70% of whom were minority group members, completed self-report instruments measuring cognitive-motivational processes and academic performance. Students reported using many self-regulated learning strategies and had generally positive attributional patterns. In addition, the students expected to perform well in the course and did, in fact, accomplish course objectives, on average. There were significant positive correlations between self-regulated learning strategies and (a) academic performance expectations and (b) attributional patterns. However, no relationship was found between students' academic performance expectations and their subsequent academic performance. It was concluded that these students may benefit from learning ways to assess the relationship between their own efforts and academic outcomes, including how to engineer the outcomes of choice.

Relationships Among Cognitive-Motivational Processes and Academic Performance in Community College Students With a History of Academic Failure

This study targeted students with a history of academic failure to examine relationships among their reported self-regulated learning strategies, attributional patterns, academic performance expectations, and academic performance. This group was selected to better understand the cognitive-motivational processes of an understudied group.

Cross (1976) described the major challenge posed by the growth of community colleges and open admissions policies in the 1960's as bringing to postsecondary institutions students who were academically unprepared for college work, students who had not been ". . . successful at what society considers their major task--going to school. . ." (p. 4). While a variety of instructional efforts have been devised to meet the educational needs of academically underprepared students and large sums of money continue to be spent on such efforts, the motivational patterns and subsequent academic achievement of students with a history of academic failure have rarely been investigated in the context of contemporary cognitive-motivational theory and research.

Contemporary cognitive-motivational theory and research suggests that the acquisition of subject matter content is but one part of what students learn in school. For continued and

effective academic learning and achievement, students must "learn to learn" (Corno & Mandinach, 1983; Corno & Rohrkemper, 1985; Novak & Gowin, 1984; Pintrich, Cross, Kozma, & McKeachie, 1986; Weinstein & Mayer, 1985).

In one research program, Corno and her associates (Corno, 1986; Corno & Mandinach, 1983; Corno & Rohrkemper, 1985) propose a model that defines self-regulated learning (SRL) as the highest form of cognitive engagement students can use in school. This model proposes that self-regulation during academic work depends on three components: cognition, motivation, and volition. Self-regulated learners use cognition to acquire, retain, and retrieve information, motivation to propel their efforts, and volition or metacognitive control to monitor and protect their intentions.

According to this SRL model (Corno, 1986; Corno & Mandinach, 1983; Corno & Rohrkemper, 1985), success expectations result from a learner's awareness of effective cognitive strategies that may be called forth to serve in completing academic tasks. Further, incorporating constructs and findings from the large body of research on causal attributions (Weiner, 1979, 1985), the model proposes that learners who use self-regulated learning strategies will have positive attributional patterns for both success and failure experiences. They will take responsibility for success outcomes by attributing them to ability, effort, and correct strategy use and will attribute failure outcomes to causes that do not undermine conceptions of their personal competence, such as lack of effort, incorrect strategy use, task

difficulty, or receiving inappropriate assistance. Further, such learners should not have negative attributional patterns for either success or failure experiences. They should not blame themselves for failure outcomes by attributing them to a lack of ability nor fail to take credit for success outcomes by attributing success to task ease or receiving appropriate assistance. Table 1 presents the positive and negative attributional patterns for success and failure experiences.

Insert Table 1 about here

Although positive relationships have been found among reported self-regulated learning, ability and performance (Corno, 1986; Corno, Collins & Capper, 1982; Corno & Mandinach, 1983; Mandinach & Corno, 1985; Schimmel, 1986, cited in Corno, 1986), academically able students (Mandinach & Corno, 1985) and academically weaker students (Schimmel, 1986, cited in Corno, 1986) both displayed wide variability in self-regulated learning strategies. In addition, findings from Corno's (Corno, Collins & Capper, 1982) research provide support for the model's hypothesis that the underlying strategies of self-regulated learning can be acquired when students are given explicit instruction and modeling coupled with multiple opportunities for practice.

It is reasonable to expect that one of the cumulative

effects of academic failure may be an enduring view of oneself as a poor student, including ineffective cognitive learning strategies and negative self-appraisals. This view should, in turn, deter such individuals from success expectations and subsequent academic performance. This study sought to provide information about the following general questions: (1)Do high school graduates with histories of low grades profess to engage in self-regulated learning strategies? (2)To what factors do these students attribute their past academic performance? (3)What are the performance expectancies of these students with respect to academic work in one of their current college courses? (4)What is the academic performance of these students in one of their current college courses? The major purpose of the study was to examine hypothesized relationships among self-regulated learning strategies, attributional patterns, academic performance expectancy and academic performance in a regular academic setting among learners with a history of academic failure.

Method

Subjects

Participants were 97 community college students who had histories of academic failure, as defined by low high school grade point averages and low scores on a standardized test of basic skills in reading, writing and mathematics. The high school grade point average was available for 72.2% of the sample. The mean value was 71.6 and the mode was 70. At the time of this study, students were in the highest level

developmental reading course, which required reading at the 10th grade level. The participants' ages ranged from 18 to 56 with an average age of 25.9 years. There were 59 females (60.8%) and 38 males (39.2%). Participants were students at a public community college in metropolitan New York City whose overall student population is approximately 40% Black/Afro-American and 40% Hispanic. Students who were initially placed in English as a Second Language courses were not included in the sample. Approximately 86% of entering students are placed in at least one developmental reading, writing, mathematics or English as a Second Language course, and approximately 85% of the student population receives some form of financial aid.

Instrumentation

Self-Regulated Learning Strategies (SRL). A 20-item rating scale used in Corno, Collins & Capper (1982) was used to assess self-regulated learning strategies, including information processing and metacognitive control processes. Students were asked to indicate the extent to which they engaged in self-regulating behaviors during both class activities and individual assignments: For example, "When your teacher is talking, do you think of things you learned in the past or already know and how they are like the new things the teacher is talking about?" and, "If you don't understand something your teacher says, do you try to figure out why you don't understand?" Each self-regulated learning item was scored 1 to 4, where 1 indicated almost never and 4 indicated usually. Don't know responses were treated as missing data. In order to

obtain scale scores for individuals, a weighted scoring procedure was utilized, such that individuals who provided valid non-missing responses to fewer than all 20 items received a score based on the items which they did answer. The theoretical range of scores on the scale was from 20 to 80, where a score of 20 signified an almost never response to all answered items, while a score of 80 signified a usually response to all answered items. The actual range was from 35 to 79, with a mean of 57.16 (SD = 9.07). Cronbach's alpha was found to be .84.

Academic Performance Attributions. An instrument used in Corno, Collins & Capper (1982) was used to measure attributions for performance in the basic skills subjects of reading, writing and mathematics. It consists of 18 situations, half of which present a failing outcome and half of which present a successful outcome. Each situation has 5 possible response options representing the causes of ability, effort, task difficulty/ease, teacher/text assistance, and strategy. A sixth choice permits subjects to write in their own perceived cause. The task requires subjects to pretend that the situations happened to them and to select the first-and-second-choice attributions that best explain why the situation occurred. For example, the response options for the unsuccessful situation, "You couldn't understand the directions for doing a homework assignment," were: a) You couldn't keep your mind on it; b) You don't understand most assignments; c) The assignment was complicated; d) The teacher hadn't gone over it; e) You didn't read it carefully and think about it before you began; and f)

Other: (write in your own cause). The response options for the successful situation, "You learned the math lesson really quickly," were: a) You listened carefully in class; b) You are good at math; c) It was an easy lesson; d) Your teacher was very clear; e) You figured out how the problems were like ones you already know how to do; and f) Other: (write in your own cause). The result of the first-and-second-choice ranking procedure is a weighted composite of subjects' first and second choice attributions (first choice attributions were weighted by a factor of two) for the success and failure subscales. Cronbach's alpha was calculated for the measure. The nine-item weighted success and failure subscales displayed internal consistency reliability coefficients ranging from .37 to .67.

The instrument is designed to overcome several deficiencies common to attribution measures. First, the ranking procedure permits subjects to offer multiple causes for events, rather than choosing only one attribution among several. This may represent a more realistic approach to the interpretation of academic outcomes. Second, the instrument corrects a previously confounding element in that it distinguishes between effort perceived as a generalized intent to "do better," or "do more," and effort perceived as a strategy or an intentional directive to develop specific plans.

Academic Performance Expectancy (APE). Consistent with a psychological construct which Bandura (1977) labeled "self-efficacy," academic performance expectancy was operationalized as subjective expectations for success in

academic tasks. Schunk (1984) has applied the construct to achievement situations. A 16-item rating scale was designed to incorporate departmentally-defined objectives for the remedial reading course in which subjects were enrolled (e.g., identify the main ideas of an article). Subjects were asked to make a judgment regarding how sure they were that they could perform each specified objective, a measure of the "strength" of their academic performance expectancy (APE). Strength scores were measured by summing scores on a 5-point scale anchored by not at all (1) and positive (5). The theoretical range of scores was from 16 to 80, where 16 signified a response of not at all sure to all items which the respondent felt s/he could do, and 80 signified a response of positive to all items which the respondent felt s/he could do. The actual range was from 33.23 to 80, with a mean of 62.66 (SD = 9.14). Cronbach's alpha was computed for the scale and was found to be .84.

Academic Performance. Academic performance in the college course consisted of the score earned on the final examination for the regular 10-week academic quarter. A maximum score of 100 could be obtained. The actual range of scores was from 45 to 100, with a mean of 84.48 (SD = 10.85). This was a departmental final examination keyed to course objectives. Thus, content validity was assured. Reliability was tested by having the examinations of 16 students scored independently by a second departmental faculty member selected in such a way that all pairs of faculty who taught the course were represented. The total scores assigned by these two independent raters were

correlated and the resulting correlation was found to be .81.

Procedure

During the second week of a 10-week academic quarter, students were read instructions indicating that the purpose of the study was to find out what they knew about themselves as learners. The investigator distributed each instrument separately, read aloud printed instructions, and collected each instrument after students had completed it. The administration period was untimed. At the end of the 10-week quarter, the investigator collected students' scores on the departmental final examination.

Results

Data Analysis

Preliminary analyses included one-way analyses of variance (ANOVAs) comparing the 8 class sections with respect to all measures: self-regulated learning strategies (SRL), attributional patterns, academic performance expectancy (APE), and academic performance (Appendix A). These one-way ANOVAs indicated no significant differences due to class section on any of the measures. Accordingly, the students in the 8 class sections were pooled for subsequent analyses.

Research Questions

Table 2 presents descriptive statistics for self-regulated learning strategies, attributions, academic performance expectancy, and academic performance that were produced to answer the four research questions.

Insert Table 2 about here

Question 1. Students with histories of academic failure profess to engage in self-regulated learning strategies. The average response was equivalent to often, the third position on the 4-point SRL Scale.

Question 2. Results reveal positive attributional patterns. Overall, strategy use and effort were the most frequently selected attributions for both success and failure outcomes. The most infrequently selected attribution for success was task ease. The second most infrequently selected attribution for failure was lack of ability. However, the second most infrequently selected attribution for success was ability.

Question 3. The students had high academic performance expectancies with respect to academic work in one of their current college courses. The average response regarding their confidence in meeting departmentally-defined academic performance expectancies corresponded to pretty sure, the fourth position on the 5-point APE scale.

Question 4. Results regarding students' academic performance in one of their current college courses were also positive: 55% achieved scores above the mean.

Relationships Among Variables

Table 3 presents zero-order Pearson correlations that were computed to: (1)summarize correlations among attributions for success and attributions for failure, and intercorrelations

between attributions for success and attributions for failure; and (2)describe the relationships between each of the predictor variables, self-regulated learning strategies (SRL) and attributional patterns, and academic performance expectancy (APE), and academic performance. This table also includes reliability coefficients for each measure.

Insert Table 3 about here

In general, correlations among attributions for success and correlations among attributions for failure were low or significantly correlated in a negative direction, suggesting that these attributions represent different constructs. For example, the correlation between attribution for success to effort and attribution for success to ability was only -.23 ($p < .01$); the correlation between attribution for failure to lack of effort and attribution for failure to lack of ability was only -.27 ($p < .01$). Overall, intercorrelations between attributions for success and attributions for failure also revealed a logical consistency. For example, attribution for success to correct strategy and attribution for failure to incorrect strategy were positively and significantly correlated ($r = .62$, $p < .001$); attribution for success to ability and attribution for failure to incorrect strategy were negatively and significantly correlated ($r = -.36$, $p < .001$).

SRL strategies were found to be positively and significantly correlated with academic performance expectancy, $r = .26$, $p <$

.01. Attribution of failure to lack of ability, a negative attributional pattern, was negatively and significantly correlated with academic performance expectancy, (r = -.28, p < .01). Correlations between academic performance and (a)SRL strategies and (b)attributional patterns were generally low and non-significant. SRL strategies were negatively and significantly correlated with attribution of success to task ease, a negative attributional pattern. This correlation was found to be -.23 (p < .01). The correlation between academic performance expectancy and academic performance was positive, but weak (r = .04). The correlation between SRL strategies and academic performance was positive and somewhat stronger (r = .15), but not significant.

Discussion

In general, the findings of this study support the hypothesized relationships among self-regulated learning strategies, attributional patterns, future academic performance expectancies, and academic performance. Students who perceived themselves as having many SRL strategies in their repertoires expected to perform well in the future. They tended not to attribute academic success to task ease, a negative attributional pattern. Further, students who expected to perform well tended not to attribute previous academic failure to a lack of ability.

Results also showed that, in general, these students had positive attributional patterns. Effort and strategy attributions figured prominently in their self-appraisals for

both success and failure outcomes. Task ease, a negative attributional judgment, was the most infrequently selected attribution for success. While ability was the second most infrequently selected attribution for success, lack of ability was the second most infrequently selected attribution for failure. Thus, although these students did not take credit for academic success outcomes by attributing them to ability, they also tended not to blame themselves for failure outcomes.

Low and non-significant correlations between the attribution scales and other measures of SRL strategies, academic performance expectancy, and academic performance may be due to a lack of reliability in the attribution measures. Thus, it is difficult to ascertain whether the correlations evidenced are spuriously low or reflections of truly attenuated relationships.

No relationship was found between academic performance expectations and academic performance, which is consistent with other findings regarding academically underprepared populations (Noel, Levitz, Saluri, & Associates, 1985). When students say they expect to do well academically, their conceptions of "doing well" may differ from the norm. They may conceive "doing well" as "passing" rather than "failing," for example. Students may be responding based on their prior experiences when educational institutions have, indeed, "passed" them despite serious academic deficits and they have attained the status of "high school graduate." Such views could explain a lack of association between expectations for success and academic outcomes.

One reason to be concerned about students whose academic expectations are unrelated to their academic performance is that they may not see a need to examine and change their own learning behavior. There may be no internalized awareness that they could increase the probability of doing well academically by actively choosing to engage in certain behaviors or strategies, rather than others. They may need to internalize the fact that, at least in some instances, what they do can improve the outcome.

In summary, preliminary findings and implications regarding this understudied group of students with histories of academic failure may be described as follows: First, students with histories of academic failure may exhibit positive attributional patterns. Thus, it may be that training to alter faulty attributional processes with such students would be inappropriate. Further, such students do not always perceive of themselves as lacking in ability. They do not believe that some genetic or otherwise intrinsic factor prohibits them from succeeding. They can--as was seen here--continue to try and not exhibit learned helplessness. Second, such students may report engaging in many self-regulated learning strategies and having high academic performance expectancies. Third, the fact that these students perceive a theoretically and logically consistent relationship between their self-regulated learning strategies and their academic performance expectancies is also reason for optimism. Lastly, although these students have histories of academic failure, many of them do achieve in their academic

work.

Several cautions should be noted in examinng the present research. It is limited because it is correlational in nature, with no experimental controls. Another weakness is its reliance on self-report measures (Nisbett & Wilson, 1977).

Future research is needed to further explore the perspectives of students with histories of academic failure. Such research might include other procedures for broadening and enriching the measurement of self-appraisals, such as experimental tasks which permit the observation and monitoring of performance and carefully designed interviewing procedures. In particular, such procedures might clarify the following apparent contradictions. First, although students profess to engage in many self-regulated learning strategies, their academic history and current presence in a developmental reading course suggest a discrepancy between their beliefs regarding their academic behaviors and their actual behaviors. Second, while students expected to perform well in their course and did, in fact, accomplish course objectives, on average, their predictions about their actual performance were not accurate.

Future research is also needed of the effort-outcome relationships in students from this population. In particular, such students need assistance in learning ways to assess the relationship between their own efforts and academic outcomes, including how to engineer the outcomes of choice.

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Table 1

Attributional Patterns

Positive Attributional Patterns		Negative Attributional Patterns	
Success	Failure	Success	Failure
Ability	Lack of Effort	Task Ease	Lack of Ability
Effort	Incorrect Strategy		
Correct Strategy	Task Difficulty	Appropriate Assistance	
	Inappropriate Assistance		

Table 2

Means and Standard Deviations of All Measures (N = 97)

	X	SD
Self-Regulated Learning (SRL)[a]	57.16	9.07
Academic Performance Expectancy (APE)[b]	62.66	9.14
Academic Performance[c,d]	84.48	10.85
Attributions for Success[e]		
Effort	10.25	3.35
Ability	2.58	2.87
Task Ease	1.92	2.30
Appropriate Assistance	4.71	2.74
Correct Strategy	6.90	3.08
Attributions for Failure[e]		
Lack of Effort	5.64	3.34
Low Ability	3.50	2.87
Task Difficulty	5.57	3.64
Inappropriate Assistance	2.40	2.78
Incorrect Strategy	8.48	3.65

[a]Range = 20 - 80. [b]Range = 16 - 80. [c]n = 83. [d]Range = 0 - 100. [e]Range = 0 - 18.

Table 3

Intercorrelations of All Measures (N = 97)

Measure	Reliability (Alpha)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Self-Regulated Learning (SRL)	.84	-	.26**	.15	.16	.10	-.23**	-.12	-.03	.02	-.12	.01	-.08	.14
2. Academic Perf. Expectancy (APE)	.84		-	.04	-.10	.04	.08	-.04	-.01	.04	-.28**	-.08	.06	.14
3. Academic Performance[a]	.81[b]			-	.07	-.17	.05	.08	.17	-.12	.12	.16	-.04	.08
Attributions for Success														
4. Effort	.50				-	-.23**	-.19*	-.37***	-.30***	.26**	.07	-.06	-.19*	-.00
5. Ability	.57					-	.00	-.31***	-.41***	.03	-.06	.24**	.16	-.36***
6. Task Ease	.58						-	-.18*	-.35***	-.05	.10	.22*	.19*	-.39***
7. Appropriate Assistance	.37							-	.02	-.20*	.20*	-.01	.00	.03
8. Correct Strategy	.53								-	-.12	-.22*	-.28**	-.04	.62***
Attributions for Failure														
9. Lack of Effort	.57									-	-.27**	-.50***	-.29**	.12
10. Lack of Ability	.59										-	.07	-.12	-.46***
11. Task Difficulty	.67											-	-.04	-.50***
12. Inappropriate Assistance	.61												-	-.22*
13. Incorrect Strategy	.66													-

[a] $n = 83$. [b] Interrater reliability coefficient based on total scores for 16 subjects.

*$p < .05$. **$p < .01$. ***$p < .001$.

Appendix A

ANOVAs on All Measures: Class Section

Measure	Source	df	MS	F	p
Self-Regulated Learning	Between	7	115.91	1.46	.19
	Within	89	79.61		
Academic Perf. Expectancy	Between	7	72.32	.86	.54
	Within	89	84.34		
Academic Performance	Between	7	214.57	1.97	.07
	Within	75	108.73		
Attributions for Success					
Effort	Between	7	21.00	2.02	.06
	Within	89	10.42		
Ability	Between	7	10.20	1.26	.28
	Within	89	8.07		
Task Ease	Between	7	2.89	.53	.81
	Within	89	5.43		
Appropriate Assistance	Between	7	12.79	1.81	.09
	Within	89	7.06		
Correct Strategy	Between	7	4.83	.49	.84
	Within	89	9.83		
Attributions for Failure					
Lack of Effort	Between	7	11.54	1.04	.41
	Within	89	11.14		
Lack of Ability	Between	7	4.69	.55	.79
	Within	89	8.51		
Task Difficulty	Between	7	12.68	.95	.47
	Within	89	13.29		
Inappropriate Assist-ance	Between	7	3.88	.48	.84
	Within	89	7.99		
Incorrect Strategy	Between	7	4.53	.32	.94
	Within	89	14.01		